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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/788,811

02/27/2004

Suda Kazuyuki

51557

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53884

7590

01/17/2007

ROHM AND HAAS ELECTRONIC MATERIALS LLC

455 FOREST STREET

MARLBOROUGH, MA 01752

EXAMINER

WONG, EDNA

ART UNIT

PAPER NUMBER

1753

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

01/17/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/788,811

Applicant(s)

KAZUYUKI ET AL.

Examiner

Edna Wong

Art Unit

1753

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 30 November 2006.  
2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1, 5, 6 and 8-10 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1, 5, 6 and 8-10 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.  
4) ☒ Interview Summary (PTO-413)  
Paper No(s)/Mail Date November 21, 2006.  
5) ☐ Notice of Informal Patent Application  
6) ☐ Other: \_\_\_\_\_.

This is in response to the Amendment dated November 30, 2006. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

***Response to Arguments***

**Claim Rejections - 35 USC § 103**

***Solution***

I. Claims **1 and 5-7** have been rejected under 35 U.S.C. 103(a) as being unpatentable over **JP 7-138782** ('782) in combination with **JP 11-181589** ('589).

With regards to claim 7, the rejection under 35 U.S.C. 103(a) as being unpatentable over JP 7-138782 ('782) in combination with JP 11-181589 ('589) has been withdrawn in view of Applicants' amendment. Claim 7 has been cancelled.

With regards to claims *1 and 5-6*, the rejection under 35 U.S.C. 103(a) as being unpatentable over JP 7-138782 ('782) in combination with JP 11-181589 ('589) is as applied in the Office Action dated August 21, 2006 and incorporated herein. The rejection has been maintained for the following reasons:

Applicants state that as discussed in the telephone interview the language in the preamble can limit the invention as a whole if it is necessary to give meaning to the claim in order to properly define the invention. See *Perkin-Elmer Corp. v. Computervision Corp.*, 221 U.S.P.Q. 669, 675-76 (Fed. Cir. 1984). The preamble "breathes life and meaning into the claims." See *Corning Glass Works v. Sumitomo*

*Plastics U.S.A.*, 9 U.S.P.Q.2d 1962, 1966 (Fed. Cir.1989).

In response, the preamble does not add anything to the solution that would compositionally distinguish the solution from the prior art.

Applicants state that the presently claimed invention provides a tin electrolyte having the desired properties and at the same time does not form a tin/bismuth alloy, which may cause undesired brittleness.

In response, products of identical chemical composition cannot have mutually exclusive properties (MPEP § 21102.01).

Applicants state that '782 is not pertinent to the problem which the presently claimed invention is directed to. See *In re Clay*, 23 USPQ 2d at 1060-61. The '782 patent is directed to a completely different problem than the presently claimed invention.

In response, Applicants have a different reason for, or advantage resulting from doing what the prior art relied upon has suggested, it is noted that it is well settled that this is not demonstrative of nonobviousness. *In re Kronig* 190 USPQ 425, 428 (CCPA 1976); *In re Linter* 173 USPQ 560 (CCPA 1972); the prior art motivation or advantage may be different than that of Applicants while still supporting a conclusion of obviousness. *In re Wiseman* 201 USPQ 658 (CCPA 1979); *Ex parte Obiaya* 227 USPQ 58 (Bd. of App. 1985) and MPEP § 2144.

Applicants state that the '589 patent as the '782 patent is not pertinent to the problem addressed by the presently claimed invention.

In response, Applicants have a different reason for, or advantage resulting from doing what the prior art relied upon has suggested, it is noted that it is well settled that this is not demonstrative of nonobviousness. *In re Kronig* 190 USPQ 425, 428 (CCPA 1976); *In re Linter* 173 USPQ 560 (CCPA 1972); the prior art motivation or advantage may be different than that of Applicants while still supporting a conclusion of obviousness. *In re Wiseman* 201 USPQ 658 (CCPA 1979); *Ex parte Obiaya* 227 USPQ 58 (Bd. of App. 1985) and MPEP § 2144.

Applicants state that in particular, the '589 patent is directed to a tin/zinc alloy and bath. The parameters and concentrations are disclosed for zinc, not bismuth (paragraph 0019).

In response, the tin/zinc alloy and bath is only one case disclosed by the '589 patent (paragraph 0019). Disclosed examples and preferred embodiment do not constitute a teaching away from a broader disclosure or nonpreferred embodiment (MPEP § 2123(II)).

Applicants state that the '589 patent discloses using polyoxyethylene nonylphenyl ether as a stabilizer for tin alloy baths especially tin/zinc baths (paragraph 0015).

In response, the reason or motivation to modify the reference may often suggest

what the inventor has done, but for a different purpose or to solve a different problem. It is not necessary that the prior art suggest the combination to achieve the same advantage or result discovered by the Applicants. *In re Linter* 458 F.2d 1013, 173 USPQ 560 (CCPA 1972); *In re Dillon* 919 F.2d 688, 16 USPQ2d 1897 (Fed. Cir. 1990), *cert. denied*, 500 US 904 (1991); and MPEP § 2144.

Furthermore, a compound and all of its properties are inseparable. *In re Papesch*, 315 F.2d 381, 391, 137 USPQ 43, 51 (CCPA 1963) [MPEP § 2141.02(V)].

.Applicants state that the presently claimed invention is not a tin alloy bath but a tin solution. Accordingly, the person of skill in the art would have had no reason or motivation to include polyoxyethylene nonylphenyl ether in the presently claimed tin solution based on the disclosure of '589.

In response, products of identical chemical composition cannot have mutually exclusive properties (MPEP § 21102.01).

It has been held that the selection of a known material based on its suitability for its intended use supports a prima facie obviousness determination. See MPEP § 2144.06 and § 2144.07.

II. Claim 4 have been rejected under 35 U.S.C. 103(a) as being unpatentable over JP 7-138782 ('782) in combination with JP 11-181589 ('589) as applied to claims 1 and 5-7 above.

The rejection of claim 4 under 35 U.S.C. 103(a) as being unpatentable over JP 7-138782 ('782) in combination with JP 11-181589 ('589) as applied to claims 1 and 5-7 above has been withdrawn in view of Applicants' amendment. Claim 4 has been cancelled.

***Response to Amendment***

***Claim Rejections - 35 USC § 103***

*Solution*

I. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP 7-138782 ('782) in combination with JP 11-181589 ('589) as applied to claims 1 and 5-6 above.

JP '782 and '589 are as applied above and incorporated herein.

The solution of JP '782 differs from the instant invention because JP '782 does not disclose wherein the bismuth (III) ion is from 0.02-0.05 g/L, as recited in claim 8.

JP '782 teaches 0.2-40 g/l trivalent bismuth ion (page 2, [0007]).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the bismuth (III) ion described by JP '782 with wherein the bismuth (III) ion is from 0.02-0.05 g/L because it has been held that changes in temperature, concentration or both, is not a patentable modification; however, such changes may impart patentability to a process if the ranges claimed produce new and unexpected results which are different in kind and not merely in

degree from results of the prior art, such ranges are termed "critical" ranges and Applicant has the burden of proving such criticality; even though Applicant's modification results in great improvement and utility over the prior art, it may still not be patentable if the modification was within capabilities of one skilled in the art; more particularly, where general conditions of the claim are disclosed in the prior art, it is not inventive to discover optimum or workable ranges by routine experimentation. *In re Aller*, 220 F2d 454, 456, 105 USPQ 233, 235 (CCPA 1955) and MPEP § 2144.05.

*Method*

II. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over **JP 7-138782** ('782) in combination with **JP 11-181589** ('589).

JP '782 teaches a method comprising:

(a) providing an electrolyte tin-plating solution having a pH value of 1.5-6.0 (= pH of 2-9) [page 3, [0009]] and comprising:

(1) 5-60 g/L of tin(II) ion (= 1-50 g/l tin ion of bivalence) [page 2, [0007]];

(2) a complexing agent (= gluconic acid, glucoheptonic acid and gluconic lactone (page 2, [0005]); and citric acids (page 5, Table 4));

(3) a non-ionic surfactant such as alkyl nonylphenyl ether (page 2, [0008]);

(4) 0.02-0.2 g/L of bismuth(III) ion (= 0.2-40 g/l trivalent bismuth ion) [page 2, [0007]];

(5) a conducting salt, an anode-dissolving agent or an antioxidant (= an



alkali metal salt in order to make good energization nature at the time of plating)  
[page 2, [0008]];

(b) generating a current density ( $= 0.1\text{--}5 \text{ A/dm}^2$ ) [page 3, [0010]]; and

(c) electrolytically depositing a tin film (page 3, [0010]) on an electronic part (= in the field of the electronic industry) [page 1, [0002]].

The solution of JP '782 differs from the instant invention because JP '782 does not disclose wherein one or more non-ionic surfactants are chosen from polyoxyethylene lauryl ether, polyoxyethylene polyoxypropylene glycol with an average of 10 units of ethylene oxide and an average of 4 units of propylene oxide and polyoxyethylene nonyl phenyl with an average of 9 units of ethylene oxide, as recited in claim 9.

JP '782 teaches alkyl nonylphenyl ether (page 2, [0008]).

Like JP '782, JP '589 teaches an electrolyte tin-plating solution. JP '589 teaches polyoxyethylene nonylphenyl ether as a non-ionic surfactant (page 2, [0015]).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the non-ionic surfactants described by JP '782 with wherein one or more non-ionic surfactants are chosen from polyoxyethylene lauryl ether, polyoxyethylene polyoxypropylene glycol with an average of 10 units of ethylene oxide and an average of 4 units of propylene oxide and polyoxyethylene nonyl phenyl with an average of 9 units of ethylene oxide because structural relationships may

provide the requisite motivation or suggestion to modify known compounds to obtain new compounds. For example, a prior art compound may suggest its homologs because homologs often have similar properties and therefore chemists of ordinary skill would ordinarily contemplate making them to try to obtain compounds with improved properties (MPEP § 2144.08(II)(A)(4)(c) and §2144.09).

Furthermore, the substitution of one non-ionic surfactant with another non-ionic surfactant would have been functionally equivalent in electrolytically depositing a tin film.

II. Claim 10 rejected under 35 U.S.C. 103(a) as being unpatentable over JP 7-138782 ('782) in combination with JP 11-181589 ('589) as applied to claim 9 above, and further in view of Hawrylo et al. (US Patent No. 4,355,396).

JP '782 and '589 are as applied above and incorporated herein.

The method of JP '782 differs from the instant invention because JP '782 does not disclose depositing a nickel film on the tin film, as recited in claim 10.

Hawrylo teaches a conductive layer 38 of a multi-film layer which includes a film of tin directly on the bottom surface 22 of a substrate, a nickel film over the tin film and a gold film over the nickel film (col. 3, lines 27-30).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the method described by JP '782 by depositing a nickel film on the tin film because this is well within the skill of the artisan dependent

upon the intended use of the electronic part, particularly to the environment to which the electronic part will encounter, which would be most suited for the application of the electronic part. Hawrylo teaches a conductive layer comprising a film of tin directly on the bottom surface of a substrate, a nickel film over the tin film and a gold film over the nickel film (col. 3, lines 27-30). The substrate is a body of a single crystalline semiconductor material for a semiconductor laser diode (col. 2, lines 28-37).

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

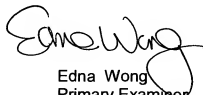
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Edna Wong whose telephone number is (571) 272-1349. The examiner can normally be reached on Mon-Fri 7:30 am to 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen can be reached on (571) 272-1342. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
Edna Wong  
Primary Examiner  
Art Unit 1753